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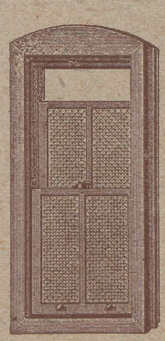

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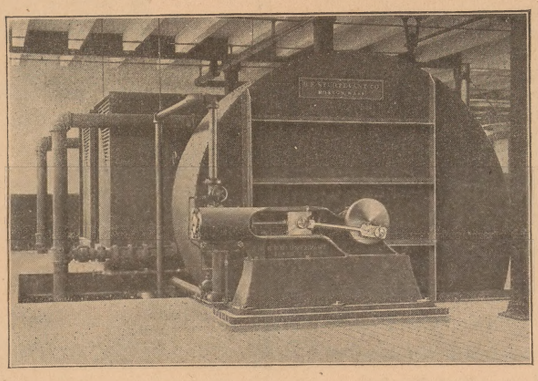

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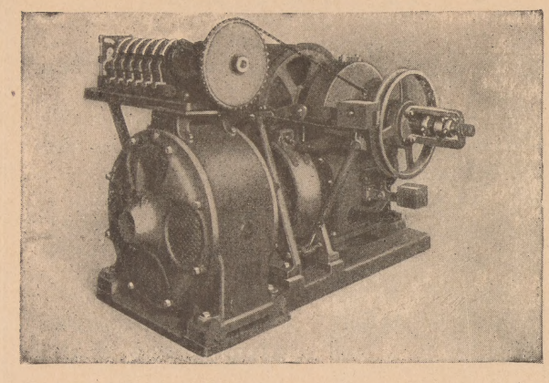

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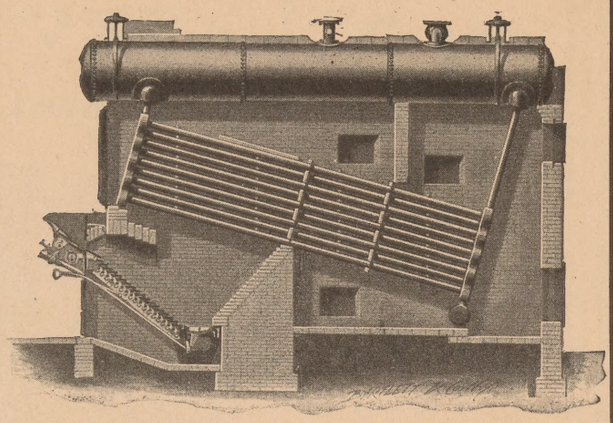

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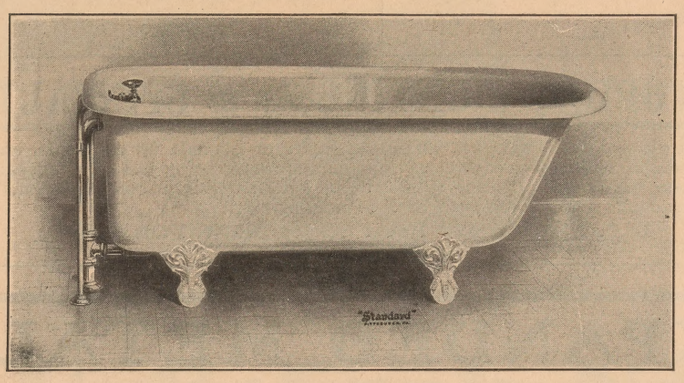

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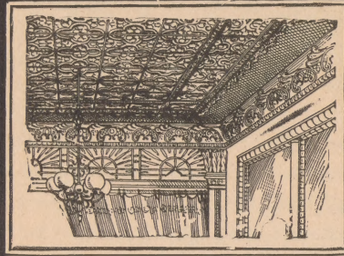

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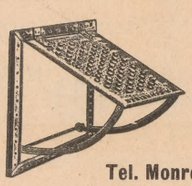

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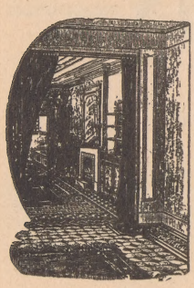

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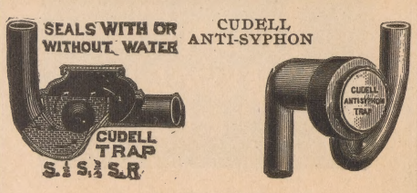

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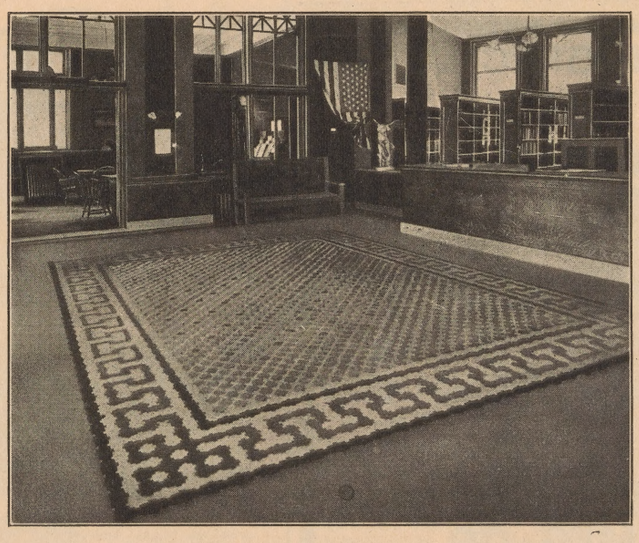

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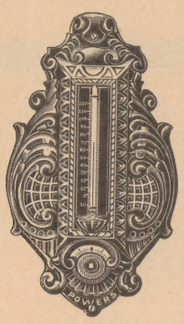

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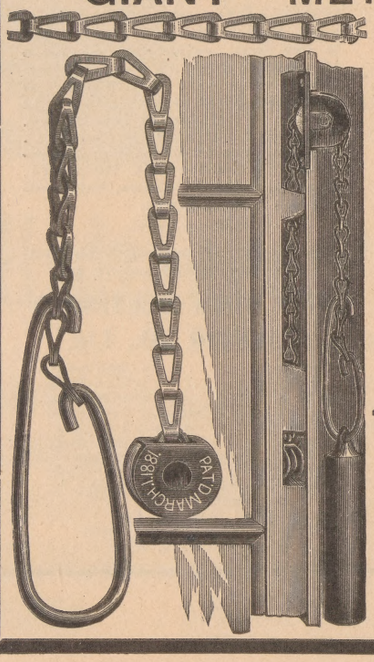

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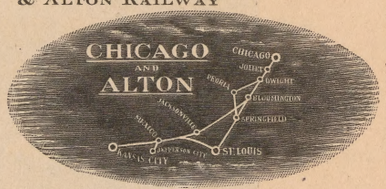

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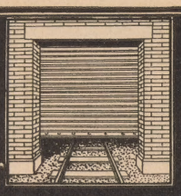

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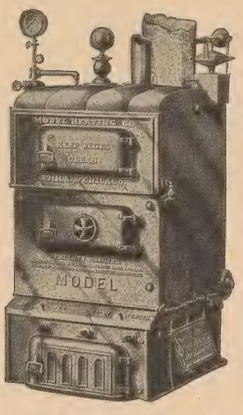

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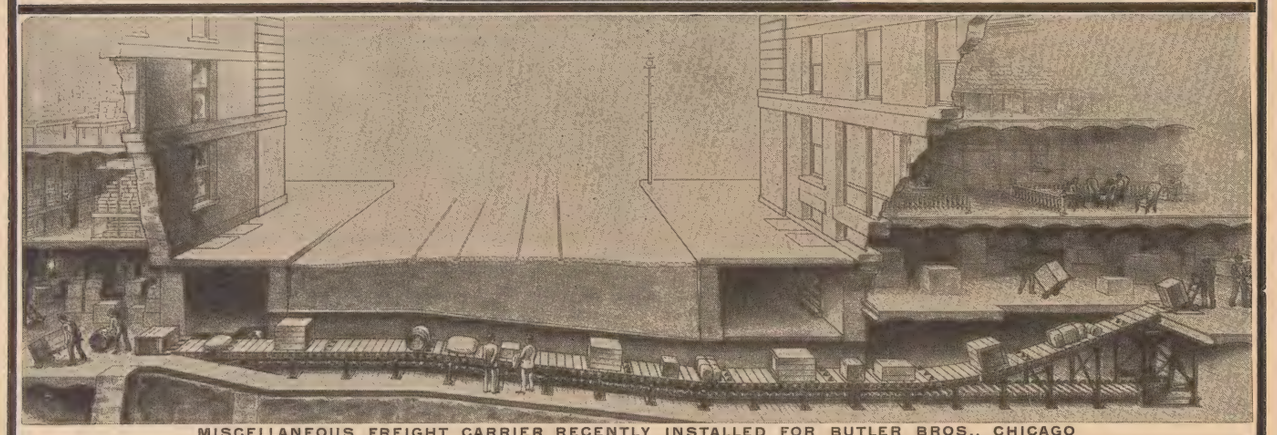

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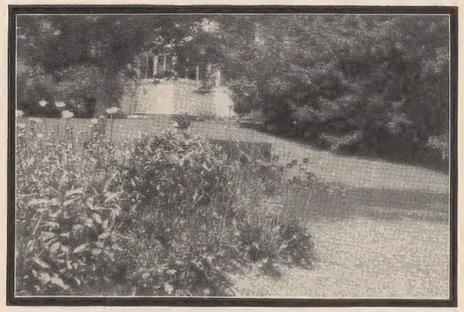

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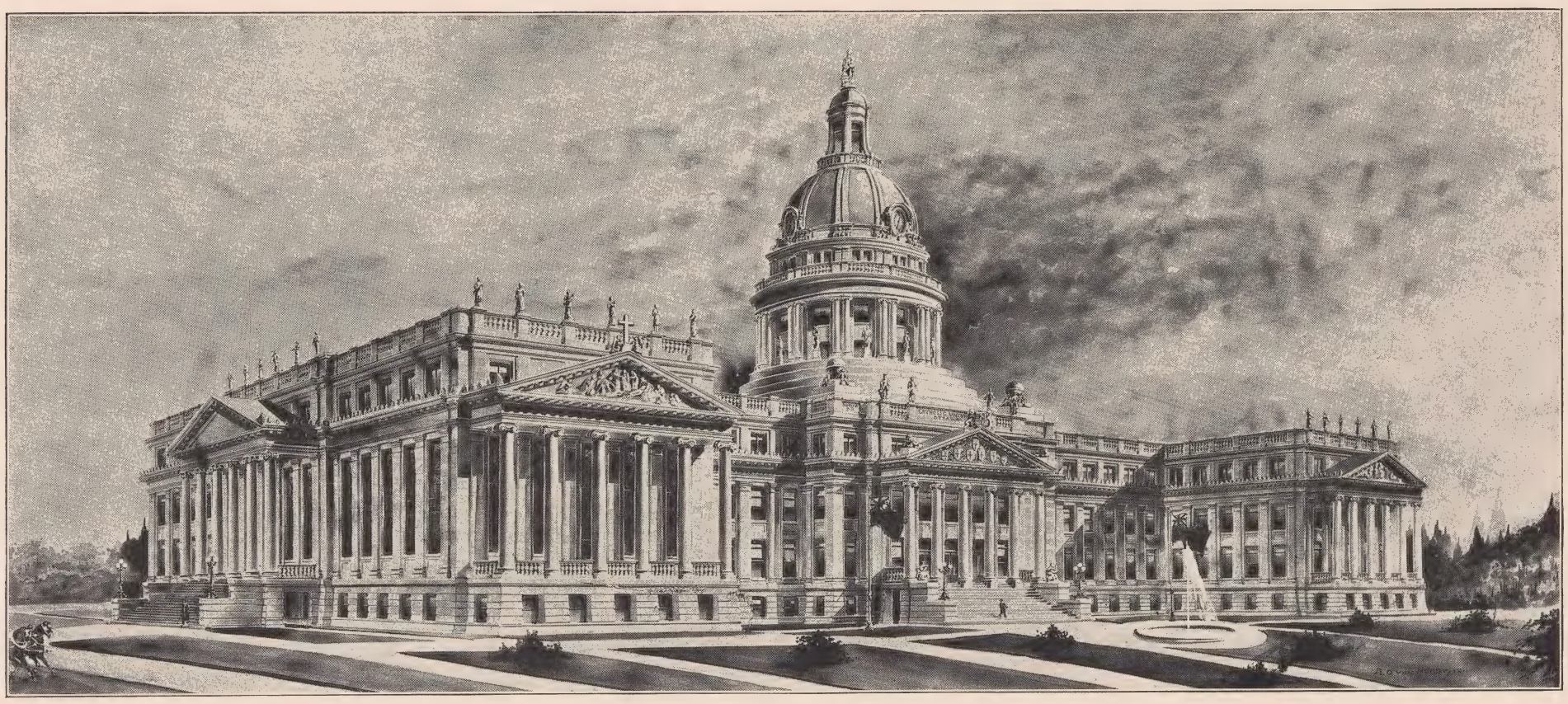

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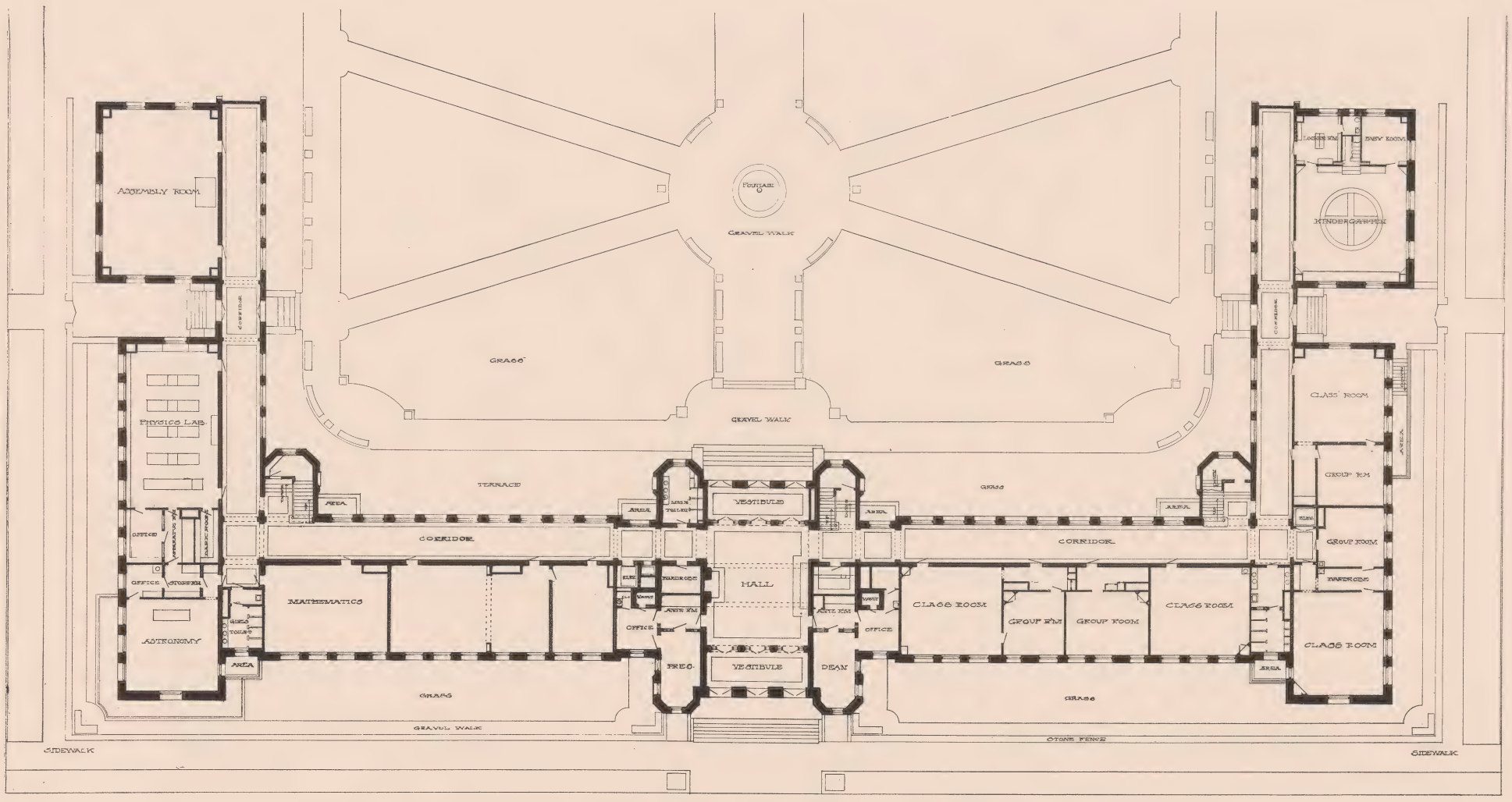

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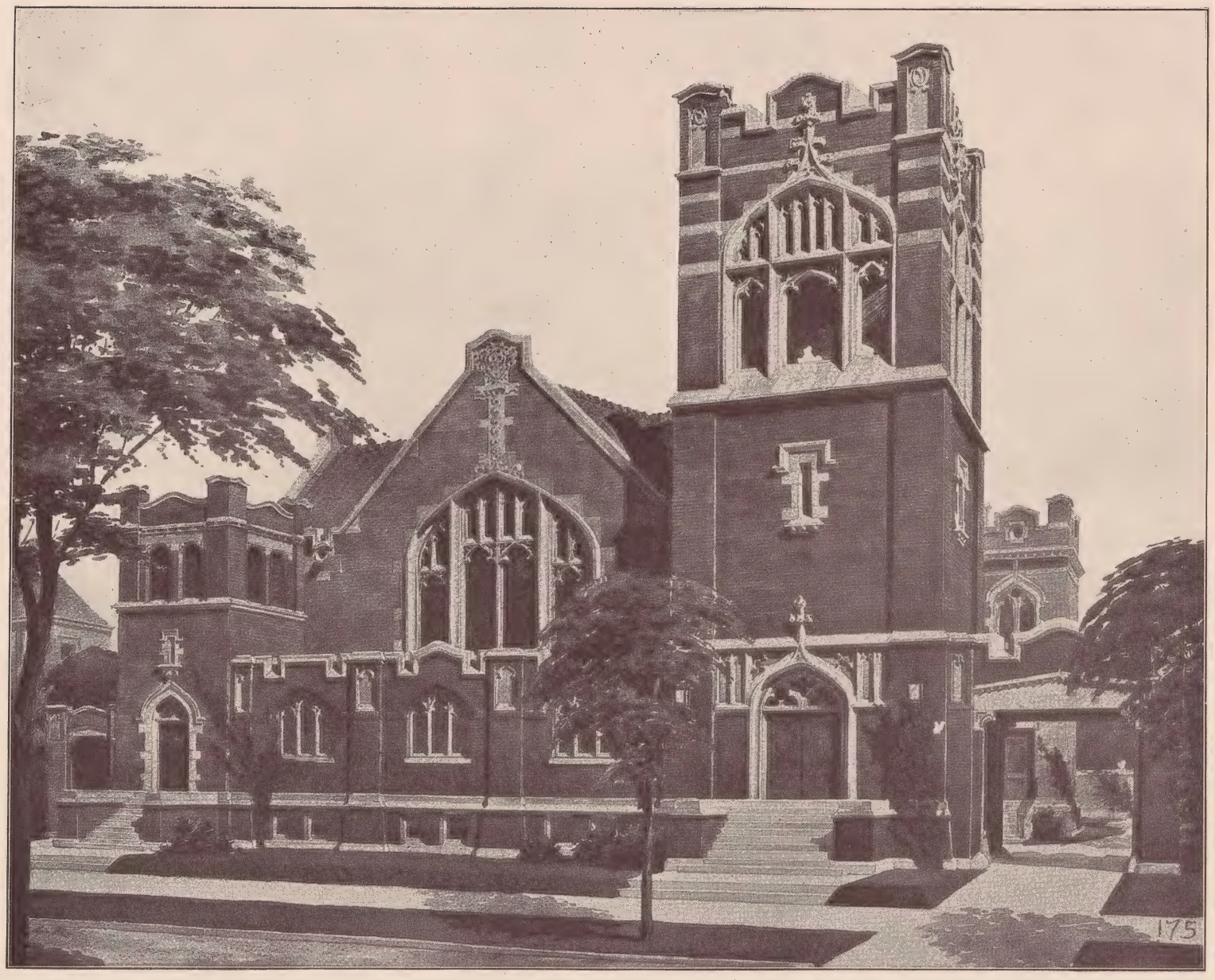

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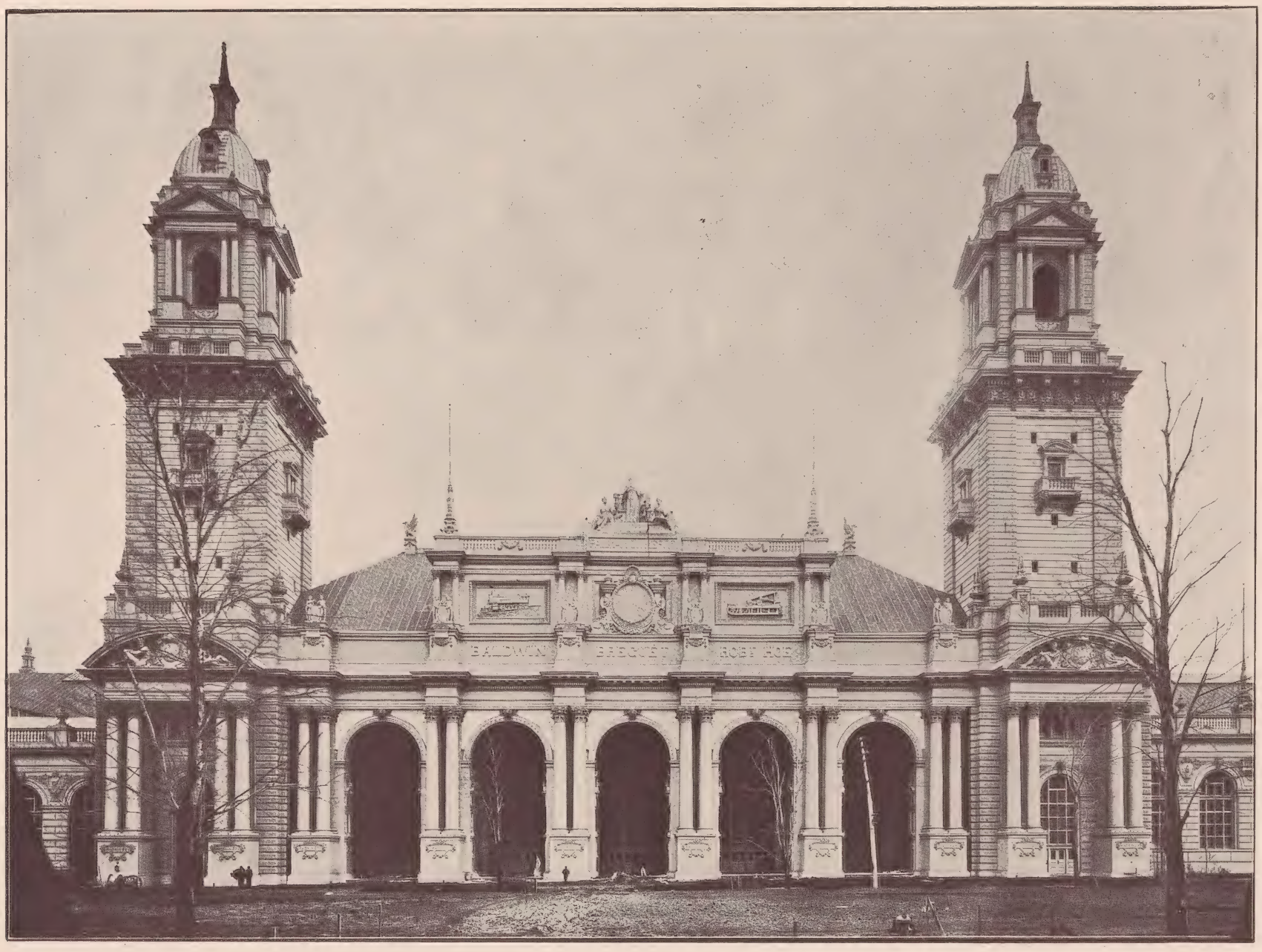

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Washington Improvement Bill in the Senate.

It is usual for the average citizen to resent the frequent slurs of the public press and the sharp wit of the cartoonists when leveled at so august a body as the United States Senate, but when individual members display such crass ignorance as that exposed in the late debate on the proposed site of the Agricultural building, it serves to convince the public that, in a degree at least, the press and the cartoonists are right in their strictures. When such men as Senators Hale and Lodge oppose a great plan reported upon after months of investigation and labor by the acknowledged authorities upon such matters in this country that is to stand for all the future years of our republic, and that upon the flimsy pretexts of excessive fees or a different location, the public has ample cause to doubt their mental balance when dealing with other things. There can be no controversy in the propositions that our capital city should express our highest ideals in art and architecture. It is therefore inexplicable that Senators who know at least the value of expert opinion can oppose a bill the value of which is so self-evident and upon the general scheme of which no one in authority, expert or otherwise, has proposed an alternative. It is to the interest of every citizen that the Newlands bill be adopted unanimously by House and Senate, and its provisions for the perpetuating of Washington's plan as laid down in view of existing conditions by the report of the Burnham commission be made as unalterable as the Constitution.

Architects' Drawings Ruled Works of Art.

The commercialism of the age and its ignorance of the true or even the commercial value of art is nowhere so much in evidence as in the Department of Customs, where the status of each article is established. And in this court the estimate placed upon things is a fair reflex of the estimate of the people. Thus a great pork packer only learned that a painting was as worthy of consideration as a hog when France refused to admit hogs unless this country admitted works of art. A customs official in Canada ruled that the plates in THE INLAND ARCHITECT were dutiable, and when asked for his authority, stated that "Butterick's dress patterns were listed and that these plates showed patterns of houses and were therefore subject to the same duty as dress patterns." At last, however, the question of architects' drawings has been settled, and by a recent ruling placed upon the list as works of art, and other signs of improvement in the understanding of the people in regard to the commercial value of art, gives hope for the future. No country can be commercially great until she is great in art. If its commercial value is recognized, then from that a true appreciation may grow. The knowledge that a piece of clay or marble worth a few cents can be formed into a thing of beauty that yields a thousand per cent upon the investment will, some time, lead the commercial mind that understands this phase of art into an appreciation of the art value of the thing itself.

ABOUT FIREPROOF BUILDINGS.

BY FREDERICK BAUMANN, ARCHITECT.

THE old proverb, "Experience is the mother of science," is valid also in regard to fireproof buildings; and, though slow, the growth has been sure in this regard. It has been known since primeval days that earth and all materials therefrom derived are fire-resisting, yet their exclusive application on any buildings — not mere structures — of any character may justly be doubted. It is even a question whether in earlier times up to the past century the idea of fireproof buildings has even been seriously considered. It is indeed altogether of modern origin and owes its rapid development to the wonderful progress made in the fabrication of iron materials.

But iron is a material which, like all other metals, loses its firmness under the influence of heat. This its character has ever been known since the earliest days, yet — strange to say — modern man had to pay for having this old fact brought to his mind by "experience." Some seventy-five years ago cast-iron girders and lintels had become in use, aside from columns of the kind, which are of an earlier origin. Buildings were thus made fireproof by spanning brick arches between beams. But the columns were left wholly unprotected, and so it happened that a small fire on its lower floor brought destruction to a whole building. It was demonstrated what ought to have been foreseen and, probably, the demonstration repeated itself again and again, before it became acknowledged, that all iron parts to a fireproof building must be kept shielded against fire. Thereupon it became a matter of further experience as to the *best* mode of fireproofing irons.

Many kinds of factory buildings calling in regard to fireproofness for better facilities, thus giving rise to a manufacture of rolled wrought-iron beams, and Bessemer's wonderful and great invention put full life into this business. Nowadays there are on the market hundreds of sizes and shapes of steel beams in lengths up to sixty feet. Not only beams and girders were, but columns of the kind also began to be used in floor constructions on a number of sundry kinds of buildings, which it had been found profitable to erect to a height of ten stories. Thus it occurred that in the year 1884 the Home Insurance Co., intending to erect a new nine-story office building, invited three architects to offer plans. I, as one of these, in my wonted devotion toward progress in regard to building matters, undertook to lay out in these plans an independent iron structure, sufficient to sustain the building and keep all enveloping materials in place. Before the year expired I published the idea, 250 copies of which I distributed. The plans thus laid out, the first of the kind so conceived, and a few of the prints are still in my possession. I regret my neglect to apply for patent. I fancied the matter to be a mere idle speculation, which nobody might follow and which, at all events, anybody else could set up just as well. The fact is that two years later the "Tacoma" was erected on this very principle as the first building of the kind in the world — thirteen stories high.

It is still at the present day an open question whether authorities have any right to prescribe the height of buildings. In continental Europe, especially in Germany, they do so and exercise this right for the benefit of communities. In our country, however, the case is different. We acknowledge a common law which stands, unwritten, above the power of civil authorities. All statutory laws are by these enacted, but the courts determine whether those laws are or are not valid under the rules of the common law. The courts in fact are the highest authority. Jurists, therefore, opine that the up and down limits of real estate can in no way be restricted by any civil authority, the courts alone having power under the common law to determine what the case shall be. This is a slow and, maybe, uncertain process. Hence the many premature and uncertain actions on the part of civil authorities. In New York the height of buildings seems to be in no way confined. "Skyscrapers" are the rule, though to the disgust of the general public, whose opinion, as Vanderbilt has it, be "damned." But it will appear to me that there is a time approaching when the erection of all skyscrapers will come to an end. The past twenty-five years have given us health departments in all cities, and it must be hoped and expected that the same are progressively inclined. Good sense will lead them to decide that buildings beyond a certain height, rationally determined, constitute what may justly be called a nuisance. Imagine, any one, a street fully beset on both sides with skyscrapers, would it not be almost bare of light and air, the main factors in public health? A positive general law in regard to height of buildings everywhere would then put an end to all quackeries of the kind, which in a number of cities are in vogue under ever repeated changes. The authorities in Baltimore express now a desire to restrict the height of buildings, but to-morrow another council may be teeming with "higher" ideas. And with all this any crank may succeed in an appeal to the courts for annihilating all such arbitrary laws.

By a renowned decision on the part of the Supreme Court the common law is held to be a kind of living organism which grows in communion with social progress. When some twenty-five years ago the first stationary bridge across the Father of Waters had been built, the shipowners appealed to the courts for abatement of this "nuisance," as impeding free and clear navigation, which had for ages been guaranteed under the common law. But the court recognized modern railroading to be on a par with time-honored navigation, and decided accordingly. Thus the ancient common law became vested with the mantle of progress, and it would appear to be probable that in its authority it will favorably adjust the matter in question. Be it hoped that the health authorities will jointly take this matter in hand and see it settled.

It is a common belief that materials made of clays and sands are thoroughly fireproof. This, however, is the case only with the very purest of them. In nature all are more or less mixed with foreign ingredients, which in corresponding measure deprive them of their inherent property. The best fireproof clay is a rare article and stands high in price. But the commonest kinds of it ought to be, and often are, preferred in the manufacture of the hollow tiling which is used for protecting irons in fireproof buildings, and for filling the spans between beams.

In relation to the condition of front materials in the burnt Baltimore buildings, according to an expert, "The behavior of the materials used in the construction of the exterior walls is the most noticeable thing to the casual observer. Marble and sandstone, granite, faced brick and terra cotta have all seemed to suffer terribly from the fierce heat of the fire. The sandstone seemed to spawl and crack on the edges wherever they were prominently exposed, the effect being to round off the corners. In general the damages to these stones is a surface damage. The limestone, however, cracked in deep and its injuries were, therefore, more effective. Face brick stood the fire but a little better than terra cotta, projecting courses, edges and corners in both cases suffered the most."

In relation to the condition of wall faces in the interior of Baltimore's buildings I may mention that my experience in prior cases has been that any kind of a half-way fire left its mark upon the wall faces and were spawled off. Many, and sometimes all, of the brick of the parts struck by flames were spawled, now and then to a depth of more than an inch. I drew from these facts the lesson, that stores filled with combustible goods should always have their inner wall faces lined to the point of shielding them against deterioration by fire.

As to the probable damage on the Baltimore fireproof buildings, I believe that it should be estimated at not less than 80 per cent. Nothing has been saved except, say, two-thirds of the iron construction, as well as of the tiling, and perhaps one-half of the value of walls. This, altogether estimated at 45 per cent of total cost, the value of what is really left is, cleaning up and preparing for repairs considered, about 20 per cent, probably even less. Foundations, as perfect, are to the increase of salvage. A restitution of these buildings to their former solidity and appearance will be a very serious task, and many times the point in view may have to be to an extent neglected, so that the building will be brought to a condition which does not fully represent its original value. It would, therefore, appear to be incorrect to say that these fireproof buildings have *withstood* the effects of fire. They have in fact merely shown that human ingenuity had succeeded in a saving of some consistent skeletons, of which it may justly be said that in some limited measure they have contributed toward retarding the course of the fire. Had they been there in a tenfold number, the spread of the fire would undoubtedly have been far less rapid, and the total loss, as matter of conjecture, essentially less. Such consideration would lead to the opinion that where about one-half, or even one-fourth of the central part of a city consists of but ordinary fireproof buildings, the elements, even such as

raged at Baltimore, would be powerless as to wholesale destruction. Baltimore has taught that Chicago can by no means be regarded as proof against the possibility of a second conflagration. Let it be hoped that soon she will have a building law to the effect of gradually leading to an impossibility.

At the present day it would, though difficult and expensive, not be impracticable to erect buildings which could not be inflamed from without, nor seriously damaged on their exterior parts. Their interior parts also could with proper care be made positively incombustible, and subject to but trifling damages, though they may contain goods and articles which are inflammable. To this end it is required to produce, after repeated experiments to the effect, face brick and terra cotta which will not soften nor spawl off under heat approaching that of melting iron, and face with these all exterior parts, under exclusion of any kind of cut stone — to make exterior doors and frames, also window frames and sash of metal — to fill sash with wire glass and also provide all windows with rolling iron shutters. This ought to and probably will be sufficient for withstanding any and all heat that may come from without, even such as was raging at the Baltimore fire. Damages would be reduced to some smoke on the walls, to destruction of rolling shutters, of doors and — may be — of some of the glass. But the firemen should know that they must not direct any hose as against such masonry. The interior to contain no wood of any kind in any part. There is no difficulty in making the right kind of concrete floors where the proper tiling is not preferred. All plastering material to be of a kind selected on experiment. Let any such building be used for apartment or office purposes, or for stores filled with incombustible goods, incidental fires therein would be of the most trifling account.

In hospitals this result would be reached by dividing each of the floors into at least two parts, guardedly connected with each other, and also story with story, in order to assure a positive certainty that a mishap at any place could not lead to any fatality. This certainty can still be enhanced by avoiding wooden furniture of any kind, and by saturating all cotton goods with a mixture that will render them uninflammable, there being no difficulty in obtaining such. Buildings filled with inflammable goods should have all inner surfaces of walls and ceilings especially lined so that any fire within could in no case deteriorate the proper ones. All parts should also be provided with the best of sprinkler systems, aside from having all ordinary apparatus for extinguishing fires.

The exterior parts of such buildings should always be treated in an artistic manner. The artist-architect will thus design his work in its entirety as well as in all its details, and express in its external design the use of the building. He must be truthful in his work. For the past twenty years we have had the "Rookery" in our city as a very fair sample of an approach to the above. The demands, however, must go beyond, inasmuch as they are or ought to be for buildings artfully clad with materials of harmonizing tints.

COTTAGE HOMES.*

WHILE in the United States the architect rarely designs houses of less cost than $3,000, a recent paper read before the Architectural Association of England, by W. A. Harvey, upon cottages costing from $800 to $3,000 is so full of practical interest, showing, as it does, how the English architect has given study and time to a certainly most unremunerative problem that it is well worth quoting in full:

The subject of cottage homes, said Mr. Harvey, that you have done me the honor of inviting me to speak upon this evening I can not approach without being apprehensive that it is one with which my audience must already be well conversant; and, in submitting to you, for your consideration, observations resulting from my own experience, it must not be imagined that I regard them as being pregnant with originality, or yet that I presuppose the ignorance of my listeners.

It is my intention, as will probably have been anticipated, to take as the reference basis of my remarks the project in which I am directly interested. I refer to the scheme of the Bournville Village Trust, whose architect I have been since its inception.

By way of introduction, let me briefly state that the village of Bournville, which lies in the northeast of Worcestershire, four miles southwest of Birmingham, is of quite recent development, nearly the whole of it having been built since 1895. The estate, which is now administered by a trust, owes its existence to Mr. George Cadbury, of Northfield, the senior member of the firm of Cadbury Brothers Ltd. Mr. Cadbury's object is an endeavor to alleviate the evils which arise from the unsanitary and insufficient housing accommodation supplied to large numbers of the working classes and to secure to workers in factories some of the advantages of outdoor village life, with opportunities for the natural and healthful occupation of cultivating the soil. When the village was handed over to the trustees in December, 1900, something like three hundred and fifty cottages had been erected. Since then building has been steadily proceeded with, the total now being over five hundred. Most of those built before 1901 have two sitting-rooms, a scullery, three bedrooms and the usual conveniences. Larger ones of later date have four, five and six bedrooms, and a bathroom supplied with hot and cold water. During the last two years several cottages have been built with one large living-room instead of two smaller ones, a scullery with bath sunk in floor, or disposed of in other ways, to economize space, three bedrooms, and, in some cases, an attic. Others are now built with two bedrooms, for small families.

There is an average garden space allowed each house of 600 square yards, which is found to be as much as one man can attend to. The rents range from 5s. 6d. a week, rates included, to 12s., rates not included, and there are a few houses of a larger class at higher rentals. The village is served by Birmingham with gas, water and sewers, the rates being about 6s. 6d. in the pound, exclusive of water rate.

Although much has been said of higher percentages, four per cent on the outlay is the most that should be expected in building houses of this class, the same meeting the demands both of satisfactory accommodation and artistic appearance. The profit on the outlay is often exaggerated, and it might be well to point out that six per cent gross will rarely pay four per cent net, as is often stated. It is true that a greater profit may be made by erecting houses in endless rows to an unsightly stock pattern; but I strongly urge that the only legitimate way of diminishing cost is by the avoidance of unnecessary ornament and by the advancing of a pleasing simplicity. The jerry-builder introduces considerable ornament in detail, which, though neither necessary nor beautiful, must yet cost him something, and it is in attention to such matters as this that the difficulty may be largely overcome.

In building a street of houses the expense would, of course, be very great if, to get variety, we employed a different plan and different details for each house. We have to resort to other methods. In the case of fifty houses I might suggest getting as many details, such as windows, doors and door-frames, the same (or at any rate, half of one kind and half of another), and should avoid the monotony by a variation of the disposition of these features. An extensive elevation may also be made interesting by the treatment of a porch here, the addition of a bay-window there, and the use of rough-cast somewhere else. Go in for the most irregular building line you possibly can. In a block of three cottages a pleasing effect is gained by projecting or recessing the middle one, or putting long way on, and so forming a fore-court in front.

If it be resolved that a row of houses shall have ornament to make it attractive, I would suggest that something not too small and crowded be distributed here and there — say, on the first and third houses — the unadorned ones affording relief to the others. I might mention that if an architectural village had been the main object at Bournville, more money had been spent on detailed enrichment. After all, let money be sown lavishly, and in this spring-tide revival of architectural art Utopia itself may spring up!

The idea of a cottage home that I have always endeavored to keep in view is one in which beauty is based on utility — a principle which should guide all art, it is true, but which, in order that a plebeian and vulgar taste for shoddy display may be gratified, has been too often violated — and though with the artisan class it is perhaps most difficult to gain this end, an adherence to it must sooner or later tell. On the whole, my experience at Bournville has been that the residents in the cottages have shown a remarkable readiness to catch the idea and spirit of a homely simplicity, and it is evinced in such details, for instance, as their manner of furnishing the rooms, in their adopting suitable and artistic curtains to the casement windows, etc. Another point I have endeavored to keep in view is the advisability of building more permanent dwellings than those we so commonly see erected in these rows. Many of these are the work of a speculative builder, who sells as soon as the slates are on to one who will probably sell again, someone in the end suffering considerable loss. To say that care should be taken to well ventilate floors is almost a platitude; nevertheless this is sometimes overlooked in the effort to save a trifling expense in spite of the fact that in the long run, when dry-rot sets in, a considerable expense is inevitable. There should be a bed of concrete over the whole site, and plenty of air bricks should be employed to thoroughly ventilate ground-floor joists, and the same (or whatever ground work is used under joists) should be, if possible, above the level of the ground round the house. This prevents any chance of water collecting under floors. There is an increasing demand for a substantial home, and in time — let us hope soon — it will be such that must be supplied.

My object being to deal with cottages the cost of which is from £175 to £750, I take first the accommodation of one of the smallest types, erected in blocks of four:

Ground Floor: Living-room, 13 feet 6 inches by 12 feet 6 inches; scullery, with cabinet bath, 10 feet 6 inches by 7 feet; larder under stairs; coals and water-closet; small paved yard; lobby. Size of garden, 600 square yards.

* From *The Builder*.

First Floor: Front bedroom, 13 feet 6 inches by 12 feet 6 inches; back bedroom, 16 feet 6 inches by 7 feet; small linen closet.

Total cost, including laying out of garden and all extras, £175 per house.

Estimated net return £7 per house. A return is, therefore, obtained of four per cent.

Cubical contents, 8,023 feet per house, at 5¼d. per foot (in 1903)=£175.

At Bournville eight per cent gross yields about four per cent net.

This type is of the smallest possible dimensions and simplest construction; the roof runs uninterruptedly from end to end, and the building throughout is of a very inexpensive character. In this class of design every simplicity should be studied; unnecessary roof complications should be avoided, and the chimneys, in order to diminish trimming, flashing, etc., grouped together and brought to the highest point of the roof to avoid downdraughts and cold, smoky flues. It is not essential that each bedroom should have a fireplace if efficient ventilation is provided. Nooks and recesses doubtless make a room interesting, but in small cottages of this kind they are too expensive to introduce, and, instead, the best must be made of materials, color and proportions, if we are to make four per cent on outlay.

A very important point to emphasize regarding cottages of all sizes is *compactness of plan,* and there should be an aim at getting wall lines as long and as unbroken as possible. Where possible all outbuildings should be arranged under the main roof, otherwise when cottages are semi-detached one of them must suffer through the projecting roof of the other. This precaution also admits of a better view of the garden from the living-rooms, and the glimpse of green is no small consideration in the building of cottage homes. Care should be exercised in the planning of corner cottages to avoid the yard being exposed to the road, and where necessary it should be enclosed. The flaunting pageantry of the week's wash may be meet perhaps for the eyes of the matron of the tub, but for the public it is generally considered an eyesore.

Aspect and prospect in small and large houses alike should have careful attention, and it should be remembered that the position of the larder, which, when possible, should be north or north-east, is of no small domestic importance.

Another type is as follows:

Ground Floor: Living-room, 17 feet by 16 feet, with ingle-nook and bay; scullery, 13 feet by 10 feet 6 inches, having bath sunk in floor; larder, 5 feet by 6 feet; coals, water-closet and small paved yard. Veranda in front.

First Floor: Bedrooms, 17 feet by 13 feet 6 inches, 8 feet 6 inches by 9 feet 6 inches, and 13 feet by 8 feet 6 inches; small box cupboard; attic, 16 feet by 17 feet.

Total cost, about £300.

In view of the advantage of one spacious and healthy living-room over the parlor plan, this class of cottage has been largely introduced at Bournville. The dweller in this home must get far better value for his rent than that artisan of the suburb of mush-room growth in his cramped villa. Is it not piteous to think that the front parlor, silent and musty during the week, should know the amiable chatter and cheerful blaze of the fire but for six hours on the Sunday? A pleasing writer (Mr. G. K. Chesterton, writing not long since upon a debate in the London County Council upon the Housing Committee's report, urged that this drawing-room, with its wax fruit and other gimcracks, represents the art instinct — or, as he called it, the religion — of the artisan, and he became eloquent in denouncing its abolishment. Surely he was in jest. For could not a corner in his more spacious room be yet preserved for such treasures, and the tinkle of the hymn tune be heard to greater advantage withal?

I consider that the heights of 8 feet 6 inches for ground floor and 8 feet for bedrooms are quite adequate for the average cottage, so long as sufficient ventilation is provided. Floor space is the most important consideration in the economic building of cottage homes.

I might say here that the cottage with the long sloping roof, of which I have many examples at Bournville, has one great advantage, for if the front walls were carried up level with the ceiling line of bedroom, besides the building suffering in lack of proportion the expense of extra brickwork is considerable. Generally speaking, the height of bedrooms to the point of intersection of the roof and wall need be no more than 5 feet 6 inches. Ample ventilation may be got by the simple insertion of a 9 inch by 7 inch air brick on the outside wall, and a tobin tube within, about 5 feet 6 inches from floor, the cost of the latter being only about 3 shillings.

The bath, now justly regarded as an essential in every house, is, where the cottage is not of a size to admit of a bathroom, either sunk into the floor of the kitchen near the hearth which is covered by what may be used as a standing or draining board, or, if sufficient room, not sunk, but covered by what may be used as a settle or table. In some cases the patent adjustable bath has been used, the same being hinged at the bottom of one end in order that it may be raised and lowered from a cabinet, the upper portion having shelves and forming a cupboard, where it is kept in a vertical position, much room being saved thereby, the cost being about £3 5s. In other cases the admirable arrangement of Corne's Combined Scullery-Bath-Range and Boiler has been introduced, which I can well recommend. The patent, one well thought out, utilizes to its fullest extent the heat of the kitchen, and, while a great economy of space is effected, there is considerable saving of fuel to the householder. The heating and cooking range forms a great part of the division between the kitchen and scullery-bathroom, the flue being coursed over the head of the bath. In the center of the range is the grate, with an oven on one side and a twelve-gallon boiler, in which water is kept hot for domestic purposes, on the other. Boiling water can be obtained by raking down live fuel into a small secondary grate under the boiler through a small hole made for the purpose. Clothes can be boiled in the boiler, with which, owing to its open construction, there is no risk of explosion. Access to the boiler from the scullery is gained by opening a curved door, and further developments have been made in the way of providing a folding door in front of the range, which will shut off the boiler from the kitchen when necessary. The scullery-bathroom, which contains about thirty-six superficial feet, is fitted with a full-sized iron, enameled bath, supplied with hot water by a pipe from the range boiler and with cold water from the cistern, or through a shower-bath sprinkler fixed overhead, so that this latter luxury can be enjoyed by simply turning the tap.

I have found the introduction of White's Patent Steam Exhaust advantageous and efficient in preventing steam permeating other rooms.

The following is an example of a cottage where a clear four per cent is made on the outlay. A large number have been built to this plan at Bournville. The accommodation is:

Ground Floor: Parlor, 13 feet 6 inches by 11 feet 3 inches, and bay; living-room, 14 feet 6 inches by 11 feet 9 inches (French window); kitchen, 12 feet 3 inches by 10 feet 6 inches; larder, 6 feet by 6 feet 3 inches. Porch and hall, and cloak space under stairs. Tools, water-closet and coals, enclosed yard, and 600 square yards garden.

First Floor: First bedroom, 13 feet 6 inches by 11 feet 3 inches; second bedroom, 14 feet 6 inches by 11 feet 3 inches; third bedroom, 10 feet 6 inches by 8 feet 3 inches; bathroom (hot and cold water).

Total cost, including laying out of garden and all extras, £395 per house.

Estimated net return, £16 per house.

A return, therefore, is gained of four per cent.

Cubical contents, 26,885 cubic feet, at 5¾d.=£404.

The hearth, which should be the holy of holies in the home, is worthy of the architect's most careful attention, even in the smallest cottage. It should in itself convey the suggestion of comfort, and it might be remembered that the most inviting hearth is not that which is surrounded by artistic extravagance. Fireplaces I consider suitable for the six-roomed cottage are as follows: For front room, interior, slabbed surrounds, tiled hearth, and white wood chimney-piece; dining-room, iron tiled mantel-sham; kitchen, 3-foot range, with white tiled coves and York stone shelf and trusses; front bedroom, 30-inch mantel-sham and tiled hearth; back bedrooms, 24-inch mantel-sham and tiled hearth; the total cost of the whole amounting to £12.

I should like to say a word in favor of the casement window. It is not only cheaper than the sash window, but if in the building of a small cottage beauty of effect is *demanded* it is expressly cheap. Whatever the esthetic principle be, there is something (perhaps it is its simplicity) so homelike in its appearance, which makes it infinitely more fitting than the sash species. Behold Juliet bending to Romeo from a sash window! The old difficulty of cleaning may now be obviated by the very simple device of causing the window to open upon a pivot in the center, inwardly as well as outwardly, which permits the whole of the outside of the fixed pane to be reached easily by the hand.

A good window-sill is formed of calf-nosed bricks set on edge in cement, with two courses of tiles beneath, which forms a drip under sill, and a backing of slate, also in cement. By bringing the window-frame forward to reduce the size of top of sill, damp and the driving in of rain at this point, the curses of small property, are prevented. This makes an inexpensive sill, and, adding as it does to the appearance, is very suitable for cottages.

The following is the accommodation of a single cottage:

Ground Floor: Drawing-room, 13 feet 6 inches by 12 feet 9 inches, and bay; dining-room, 13 feet by 13 feet, and bay; kitchen, 10 feet 9 inches by 10 feet; scullery, 7 feet 6 inches by 10 feet; larder. Porch and hall, cloak space under stairs. Coals and water-closet.

First Floor: First bedroom, 13 feet 6 inches by 17 feet; second bedroom, 13 feet by 11 feet; third bedroom, 12 feet 3 inches by 10 feet; dressing-room, 7 feet 6 inches by 7 feet 6 inches; cupboards. Bathroom, with water-closet and lavatory (hot and cold water).

Total cost (1899), about £600.

The accommodation now given is of a larger class of cottage:

Ground Floor: Drawing-room, 11 feet 9 inches by 13 feet 6 inches, with 4 feet 9 inches by 10 feet ingle and bay window; dining-room, 16 feet by 13 feet 6 inches, and bay; kitchen, 12 feet by 10 feet; scullery, 9 feet 6 inches by 9 feet 6 inches; larder. Water-closet and coals, and tool-house. Porch, hall, and small cloak space. Frontage, 15 yards.

First Floor: First bedroom, 16 feet 6 inches by 12 feet; second bedroom, 12 feet 6 inches by 13 feet 6 inches; third bedroom, 13 feet 6 inches by 9 feet; fourth bedroom, 10 feet by 10 feet 6 inches; boxroom, 9 feet 6 inches by 8 feet 3 inches; bathroom.

Total cost (1899), about £650.

My object in giving these different accommodations is to

show what can be given in the way of substantial dwellings for the amounts given.

In this case the outlook at the back of the house is to be preferred to the front, and as should always be done providing the aspect is favorable, the principal rooms are placed at the back.

As to wall decoration in interiors, for small cottages, I have found it advisable to use papers instead of color wash, for the latter is very soon soiled where there are children. In the better houses a color wash may be at first used and a paper added later, with a frieze. A good effect is also obtained by bringing down the white from the ceiling as far as the picture rail, which gives light to and improves the proportions of the room. Picture rails should be placed in the smallest houses, if only to save the plaster. I generally place them level with top of architrave of door.

With regard to bricks, as far as possible I make a point of avoiding those which are mechanically made (the pressed stock brick) and use the brindled Staffordshire ones. They are more suitable for cottage building, for a pleasing variety of color is introduced at a low cost, the tints being a bright cherry red blended with purple and blue — the last of which is quite different from the indescribable vitreous blue. I prefer to use the hand-made roofing tiles and thick Welsh green Precelly slates, and occasionally the rustic peggies.

Roof-ridging, though seemingly a small matter, should have careful attention, and in my opinion it is wiser to suppress the same rather than to sharpen it, for by so doing a much-desired homely appearance is lent to the cottage. Many fantastic ridges, with vulgar finials, are employed in the building of small suburban villas, of a more or less sharp pointed character and of a depth out of proportion with the roof, which gives an unpleasant harshness to the general appearance. With the principle in view that the skyline should be softened as much as possible, I invariably use the brindled, hand-made half-rounds. With green slates I use blue ridges, as being the most suitable color, and one which defines without undue severity.

There is a strong temptation to introduce a variety of colors upon exteriors, but with cottages of the class I deal with it is advisable to refrain from so doing. My experience has been that it is best to get the color in masses, treated broadly, not in bits — say, each house of one color; for where the cottages stand close together, or even where they are semi-detached, the contrast or relief is borrowed from the neighboring one, and in the case of a village a much better general effect is thus gained. With white-washed houses a tarred plinth of about two feet is pleasing, and prevents the rain and mud splashes from being seen.

With regard to the thickness of walls, my opinion is that a 9-inch wall outside is sufficient, and is to be preferred to the cavity wall. Southwest fronts should be protected by overhanging eaves, but where this is impossible the face should be white-washed, by which not only is damp largely prevented, but an effective appearance gained.

As to general timber, I might say that I have used common building red deal, the joinery being of seconds and thirds Archangel, and, where larger timber is required, the ordinary pitch-pine. Oak is advisable for weather-boarding and sills.

Half-timbers for exteriors I do not recommend. District councils insist on a 9-inch wall being at the back; thus not only is its use false art, but an unwarranted present and future expense; an effect equally as good, moreover, is obtained with rough-cast or whitewash. Half-timber one lives to regret, for the weather tells sadly, and it demands constant repair.

A garden arrangement largely adopted is as follows: At the bottom are eight apple and pear trees and fruit trees, which, besides being reasonably expected to bear fruit, form a screen between houses which are back to back. The paths are made of six inches of ashes and three inches of gravel. The position of the grass plot and ornamental bed at the top permits a little soothing green and flash of color to be seen from within the house.

Toolsheds should be erected beyond the outhouses, not only because of their usefulness, but as a means of preserving the appearance of the back. The tenant, if these are not supplied, invariably knocks up a disorderly apology from Sunlight soap-cases, and it is best to forestall him.

Given a plot of land upon which four houses are to be erected, it is advisable, in order to more equally distribute the garden space, say, of about five hundred or six hundred square yards per house, to spread them laterally by arranging the staircase, not between the rooms, but between the houses, thus widening (not lengthening) the building. This, bringing the remote houses nearer the extremity of the land, not only gives the garden plot the preferable straightness, but a breadth of view upon same is obtained from within and the yard space materially widened.

Following the general scheme and encouraged by the Society of Beaux-Arts Architects of New York city, the Washington Atelier, which was organized some years ago by Theodore Wells Pietsch, has succeeded in filling a definite place in the educational field of the student in architecture. The direct competition of the students with those of other ateliers has been found very healthy and beneficial, and the general success under Mr. Pietsch's guidance seems to have placed Washington among the cities rapidly growing in number where a knowledge of architecture is directly and practically acquired.

TRADITION IN ARCHITECTURE.

THE European designers have been so carried away with the freedom of the "new art" that in architecture, where law must reign at least in a measure, they have allowed the freedom of the new spirit in design to degenerate into license and even anarchy. The reason of this, says the *Forum*, is clear. Tradition, which has always, in architectural style, ministered for a while to progress in refinement, by concentrating all effort upon the perfecting of the details of the style, has just as uniformly in the end led to sterility in design and then to a final reaction. This is what is taking place in France, Belgium, Germany and Austria, where the too academic formality of the long-accepted classic revival has bred weariness and revolt.

In our own land, we have suffered more from the absence of traditions than from their despotism. American architecture has only in recent years begun to learn the value, and master the use for our own special requirements, of the forms and details of the Renaissance and classic revivals, of which the French and Germans have become so tired. Our problem has been how to evolve order out of the chaos of styles; how to bring the too free individualism of an architect's efforts, and the endless variety of our changing requirements, under the harmonizing influence of unifying principles of taste and style. It is not more variety, but greater unity, that our architecture has needed; not greater freedom, but more restraint.

The last ten years have witnessed a notable advance in this direction, due, no doubt, in part at least, to the influence of the American schools of architecture and the Paris Ecole des Beaux-Arts with their thorough training in the principles of sound composition and rational planning, and the emphasis they place on the monumental and artistic handling of the masses of a design. That their training results in no mere slavish repetition of hackneyed and traditional forms is seen in the freshness and freedom of our adaptations of the historic styles of the Renaissance to our special needs. Very few of our most successful architectural works of recent years could be by any chance mistaken for European buildings. Under these conditions there could be no occasion for an artistic revolt like that which has produced the art nouveau in Europe. But as every European fashion is likely sooner or later to become the fashion or the fad on this side of the ocean, it speaks well for the taste of the public and the good sense of the architects of the United States that they have discerned the distinction between the demands of architecture and those of the minor arts, and have refused to allow in their buildings, to any appreciable extent, the vagaries of a movement whose proper field and whose really successful achievements lie in the domain of the art of small objects.

MAKING CITIES BEAUTIFUL.

IN a recent discourse before the New York Architectural League, John M. Carrere gave some pertinent advice in regard to the beautifying of our cities. His summary of the principles and conditions which underlie work in American cities is worth careful study, as his conclusions are based upon the closest study of conditions and the widest knowledge of the subject.

"With us cities far surpassing in size the largest cities of the world have grown so rapidly that the utilitarian side has forced itself upon the people, and taken all their energy, means and thought, leaving no opportunity for art excepting of the most perfunctory and casual character, so that we are now confronted with the necessity, from the artistic point of view, of remodeling practically the whole of the United States, not by the will of the Caesars, of a Napoleon or even of a Haussmann, but by the will of 80,000,000 people of different races, and with different views, a large majority of whom have no appreciation of the subject, and are, moreover, sordid and thinking of the present, without any consideration for the future.

"I find that the more I study the subject the more apparent it is to me that there are a few cardinal principles which can be considered as essential to city building and city development.

"First — Circulation. Convenient, adequate and direct circulation, by which I mean providing ample facility for every sort of traffic, so arranged as to connect every point of the city in the most direct and adequate possible manner with any other point, no matter how distant. Second — Hygiene. That is to say, the promotion of health by providing for every scientific means of sanitation, drainage, and especially for natural ventilation, by which I mean that a certain proportion should be established throughout every city between the voids and the solids, the areas covered by buildings and other improvements and those reserved for air and light. Third — The esthetic side. By which I mean the science of solving the two first problems, and all the problems dependent thereon, in an artistic way.

"In our cities, and, in fact, in our whole mode of life, we separate work from pleasure, the practical from the beautiful, instead of blending them, as is so skilfully done by the older nations of the world. A street is apt to be nothing but a thoroughfare, so that we must go and come and travel upon it without enjoyment, which we must seek elsewhere at given points laid aside for this particular purpose. In the same manner we do not combine work and pleasure sufficiently, with the result that both our work and our pleasures are strenuous in character and often become excesses.

"There is no reason why our streets should not be thorough-

fares and breathing spaces and pleasure grounds all in one. Neither is there any reason why we should not get as much pleasure in traveling through our streets during working hours as at other times. The beauty of a street induces beauty in buildings and adds beauty to life, whereas the confusion of streets and jumble of buildings that surround us in our American cities contribute nothing valuable to life; on the contrary, they sadly disturb our peace of mind and destroy that repose within us which is the true basis of all contentment.

"There is hardly a practical solution of a single municipal development which is presented that can not be made less expensive within a very few years by the development of the artistic side and possibilities of the problem, whether by creating entirely new civic centers, whether by adding to the beauty and attractiveness of these centers, and thereby enhancing the value of property and increasing the tax levy, or whether only by making an improvement which is permanent and capable of indefinite development, so that the first cost is not an absolute waste of money.

"The principal reason for the great waste of artistic opportunity in municipal development, and some other lines of development, is, without question, due to the fact that the engineer, and not the architect, has been the master mind which has conceived and executed the projects. The engineer's point of view is strictly quantitative. It is therefore important that we, the artists who compose this league, and to whom the public looks for inspiration, should see to it that the architect in this sense, and not the engineer, should be the guiding spirit in the future growth and development of our great cities."

NEW ARCHITECTURE AT CAMBRIDGE.

IN view of the recent adverse criticism of Charles Eliot Norton, regarding the architecture of recently designed university buildings at Cambridge, Massachusetts, it may be interesting to note the comment of *The Builder* upon the new work at Cambridge, England. It says, that "of the three new buildings in the neighborhood of Downing street — for in an architectural sense there are but three, the Sedgwick Museum and the Law Library forming one block — a survey of their effect on the ground may be appropriate at this juncture, when they are outwardly complete, or nearly so.

"Downing street is a narrow street turning westward out of the main artery of Cambridge, just opposite the heavy classic front of Emmanuel College; but south of it is a large open piece of park, the property of Downing College, which occupies the south end of this space, and at the north end the university has purchased from the college sufficient land to form a spacious site for the Botanical School, and for the building in which are housed both the Sedgwick Museum and the 'Squire' Law Library and the Law School, and to which is to be added ultimately an archæological museum as a return wing. On the north side of Downing street, and nearly opposite, is the new Medical School with its pendant, the Humphrey Museum.

"The long range of buildings containing the Law Library and the Geological Museum, of which Mr. T. G. Jackson is the architect, extend along the south side of Downing street, with a return wing at a slightly obtuse angle, along Downing lane on the east of the site. The Law Library forms the main feature in the Downing street front, rising higher than the rest, and emphasized by the five lofty windows of the library on the upper floor. It is not central in the design, nor does the architectural treatment adopted require that it should be, as the design of the front on each side of it is not symmetrical; the whole is freely treated in a manner arising out of the requirements of space of the different departments. The Sedgwick Museum occupies the larger eastern portion of the façade, and turns round the corner along Downing lane. The Law School, and the beginning of what will be the Archæological Museum wing, occupy the smaller portion on the west side. Beneath the three central windows of the Law Library is a triple arcaded and vaulted gateway with coupled columns, leading into the large open space at the back, at the other side of which, but not centralized, is the separate building, by Mr. W. C. Marshall, which forms the Botanical School and Museum. The Downing street front of Mr. Jackson's buildings runs to about four hundred and forty feet in length, so that it will be seen that this is an architectural scheme on a pretty large scale. The main entrance to the Geological Museum is not from the street but from the courtyard; the door, which is on the first-floor level, is reached by a double exterior flight of stone stairs treated in a decorative manner, the balustrades terminating at the foot in sculptured bisons on one side, and sculptured bears on the other. We do not exactly see the relation of these animals to a geological museum, inasmuch as they are not extinct (though the bison is likely to be so before long), and, therefore, do not come under that study of palæontology which is so closely connected with geology; but we are truly glad to find any architect having the courage to revive that fine feature, the exterior staircase, so common in the Renaissance period, and which is supposed to be so much at variance with our ideas of comfort in the present day. It is in a university city, however, that we may expect to find, if anywhere, the spirit that will prefer a little bit of effect like this to the consideration of mere every-day and prosaic convenience. It was to gain this, probably, that the principal entrance was made on the courtyard side; there would not have been space for the staircases on the street side. When the west return wing is complete, we gather that there will be a similar exterior staircase entrance to the Archæological Museum. The erection of new buildings on a large scale in an ancient university town is an architectural event of some importance, and one which inevitably suggests a reference to the continual conflict, in modern architecture, between the claims of tradition and of originality, and the difficulty of reconciling them. If ever there was an architectural situation in which tradition might be said to have the higher claim, it is in the case of an ancient university. In the very air of such a place tradition is strong; many of its usages, its regulations, even to some extent its habits of thought (to too great an extent, some may think), are governed by respect for tradition. And the old Renaissance buildings of Cambridge have about them a kind of air of the best traditions of a school of architecture which, in a peculiar degree, combines refinement of detail with general dignity of aspect. It is easy to see that this element in the architecture of the past in Cambridge has not been out of the mind of the architects of the new buildings to the south of Downing street. Mr. Jackson has given ample evidence already, in his Oxford buildings, that such considerations are prominent and important to him; *genius loci,* in spirit and intent, is writ large on many of his buildings, not excluding this latest university building at Cambridge. There have been times and occasions when the architectural traditions of Oxford and Cambridge have received no such recognition, and when buildings have been erected for the uses of the university which seemed rather to breathe the spirit of the prosperous manufacturing town without a past. Even the great mass of the Johnian Chapel at Cambridge, correct revived Gothic by an 'eminent hand,' has the air of an interloper on the scene, with the look of a Colonial cathedral rather than a college chapel; and there have been worse developments than that. In the present new buildings to the south of Downing street there is nothing to suggest the trail of the manufacturing town; the details are restrained and unobtrusive, and suggest the influence of the late Gothic and the free Renaissance which are the prevailing elements in Cambridge architecture without direct imitation. Yet, when comparing them with the older buildings in the neighborhood, one can not but doubt whether tradition might not have been a little more completely kept up with advantage. Both the geological buildings and the botanical school, while they show the influence of the Cambridge atmosphere, seem to want the dignity and unity of effect which belong to the old buildings. The latter look better in reality than they do in drawings; the new ones strike us as looking better in drawings than they do in reality. The employment of brick for the general mass of the walls is, of course, much to their disadvantage in comparison with many of the old buildings; but what strikes one also is that, with many interesting points, there is a want of that coherence and wholeness of design and character which belong to old architecture of the same class; it is not, to borrow a literary criticism, 'sufficiently inevitable.' The rather staring red-brick arches in the ground floor next the court, for instance, disturb the effect; the heavy round molding on the set-offs of the interior buttresses of the law library clashes with other details and looks coarse; the cupola over the tower on the courtyard side does not seem to fit well into the composition. The architecture has the look of having been designed in parts rather than as a whole. The treatment of the large windows of the library on the inner side, with alternate straight and curved pediments, seems more pleasing than the canted bays on the street side, with no particular finish at top; another little point in which we think tradition has the best of it. Mr. Marshall's botanical building can not be accused of being designed piecemeal; it presents a center feature with a large segmental gable of Georgian fashion, and wings pierced regularly with two tiers of large mullioned windows. Nothing could be simpler; but it looks rather bald, and one feels here again that the ancient buildings have the advantage in dignity. The windows do their duty; the interior is admirably lighted; but the external appearance is, for a university building, rather commonplace.

"The interior of the geological museum is well arranged as to lighting, with the good, old, common-sense arrangement of cases placed at right angles to the wall between the windows, so as to give each case a good side light. Onslow Ford's statue of Sedgwick is admirably characteristic, but it is not effectively placed; it should have been seen down a vista, whereas it fronts only to the opposite side of one of the galleries.

"Mr. Prior's medical school on the north side of Downing street rather clashes with Mr. Jackson's building; it belongs to so different a type of architecture. The object has evidently been to give to the exterior the plain and almost stern aspect proper to a building erected for purely technical study. This severity of style is combined with a certain degree of architectural character, and, though the treatment has less of tradition than the opposite building, it has the merit of unity of design. The carving in the panels under the pediments of the bay windows is rather coarse and out of scale with the rest. We doubt whether the freak of planting on the Humphrey Museum building at an oblique angle to the rest produces any effect to compensate for the inconvenience in planning occasioned, nor does the heavy and severe style of architecture employed lend itself very well to this picturesque irregularity. The Humphrey Museum is a nice interior, but contains another freak which would annoy us every time we had to enter the room. Two of the dark bands formed in the floor pavement coincide with the position of the columns; the next one is a foot out of center with the columns. No Renaissance architect would ever have done that."

IMPORTANT CUSTOMS RULING ON ARCHITECTS' DRAWINGS.

AN architect is an artist for the purposes of the tariff law, and the work of American architects residing abroad is entitled to free entry. This ruling was handed down March 12, 1904, by Judge Henderson M. Somerville, of the Board of United States General Appraisers, in sustaining the protest of Arthur Bohn, an architect, of Indianapolis, against the assessment of twenty per cent duty on certain drawings made by him in Europe. The drawings were designs for an art museum, prepared by him and accepted by the Indianapolis Art Association. He valued them at 600 francs. They were assessed under the provision of the law for paintings, pastels, pen-and-ink drawings, and statuary not specially provided for. In his decision, which overturns the practice of the appraisers for years in regard to such drawings, Judge Somerville says: "We are unable to draw any sound distinction between a pen-and-ink drawing of men, animals, or other objects, artistically executed, and a painting of the same objects. Architecture has always been historically classified as an art, and, in a certain sense, a skilled architect, therefore, may be an artist. . . . The architects of the Roman Pantheon or of the Parthenon at Athens were undoubtedly artists, and so of others who planned the Temple of Diana at Ephesus and that of Juno at Samos. So Ruskin, in his essay on 'The sublime in Architecture,' styles it 'the primal art of man,' and leaves no room for doubt that he who could design a structure like St. Peter's at Rome or St. Paul's in London, must be an artist in the truest sense of the term. These authorities are quoted to illustrate the fact, not that every architect is an artist, but that architecture is itself an art."

THE JOHN STEWARDSON MEMORIAL SCHOLARSHIP.

IN the twelve years since the establishment of the John Stewardson memorial scholarship the following problems have been treated: "A building for a numismatic society," "A railroad station," "A savings bank," "A postoffice and custom house," "A city church," "A farmhouse and farm shading," "A school of architecture and a museum of architectural casts," "The improvement of the entrance to Fairmount Park, Philadelphia," "A casino and baths at a health resort among the mountains," "A boys' school in the country" and "An official building for a county." The problem for 1904 is "A terminal station for an underground electric railway," which, in addition to the customary waiting-rooms, ticket offices, etc., a café-restaurant and clock tower will be required, the final drawings to be handed in before May 14.

In the list of these contestants it is interesting to note that while in a number of cases the prize was won by men who had not before received either of the three "mentions" in the contest, in one case a contestant received first mention in two and won in the third, another received second mention the first year but did not win until the sixth, and while two received first mention one year to win the next, another divided second mention with another contestant twice, winning the prize the third year. The managing committee for the twelfth competition is composed of Warren P. Laird, of the School of Architecture, University of Pennsylvania, and Architects Frank Miles Day, Edgar V. Seeler, J. G. Rosengarten, George B. Page.

HOT WATER AND TANK HEATERS.*

THE fire in a boiler grate is maintained fast or slow, according to the amount of air (or oxygen) passing, not only over, but *through* it. The more oxygen the red coals come in contact with, the more complete is the combusion, and the higher the corresponding temperature. To illustrate: the most efficient lamp-burners to-day are those in which the wick is so made as to offer the largest surface of flame to the incoming air (or oxygen). They are generally made circular with an air duct coming up through the center as well as outside, so that the circle of flame is constantly and completely surrounded by a current of air drawn in by the draft created by the lamp chimney. If the lamp is turned up so that the additional oil exposed produces an amount of vapor which in burning overbalances the amount of oxygen admitted necessary to completely burn it, it "smokes"; that is, the kerosene vapor is only partially burned, and soot or unburned carbon pours out of the chimney.

If the draft is not strong enough, or the lamp is turned very low, the *vapor* escapes unburned, noticed by its disagreeable odor. If the draft were strong enough and properly proportioned, enough air might be let in to produce an almost colorless, non-luminous flame, a result of perfect combustion.

Exactly so with the relation of the chimney draft to the boiler fire. It is quite as delicate as the relation of the lamp light to the lamp chimney, and at the same time its results are of far greater importance.

The area and height of the chimney must be proportionate to the area of the grate and size of boiler to be erected, a point the heating engineer or architect must calculate with precision, and the householder and heating contractor must insist on.

The flue responds in efficiency to the area of its *smallest* cross-section. If, for any reason, known or unknown, it is constricted, the area of this strictured part determines the efficiency of the flue. This may often be caused by the usual ornamental capstone, the openings of which are much smaller than the area of the chimney proper. A fireplace or closet may have been built in front of a chimney at some point, thus reducing the size of the flue at that point. An old brick or some mortar may have become dislodged. The smokepipe from the boiler may project into the flue too far, or the chimney may not be straight as it should be, and consequently contracted at some point in the bend or angle.

A leaky chimney is also one to be condemned. All openings, other than the one to which the boiler is connected, should be closed up air-tight. In old chimneys, the mortar may fall away and expose cracks between the bricks, thus spoiling the draft not only by the admittance of air, but on account of its rough surface, which in the case of a light draft, may become of some serious consequence in resisting the upward currents of air by friction against it.

The cheapest shapes of chimneys to build are the rectangular or square, and most chimneys for residences are of these shapes, although it is known that round flues are the best shapes for general use. The aim in selecting a cross-sectional shape being to reduce the friction of the ascending smoke and gases as far as possible.

Another point probably not fully appreciated is the fact that the house may be so shut up by weather strips, etc., that a proper inlet of air does not take place, either for proper ventilation or to supply the necessary air for the draft of the chimney. Now, draft, when the chimney has become warmed up, depends upon the unbalanced pressure of the column of heated gases against the column of outside air which is heavier.

If the pressure of this outside column is shut off, entirely or partially, by shutting up the rooms tightly, there will necessarily result a decrease in the chimney draft. Again, an inside flue is much better from any engineering standpoint than one outside of the building and exposed to the elements. It is less apt to leak, and is more efficient because it gets warmer and stays so longer.

Some chimneys smoke because they form the shortest channel by which the air can enter the house to supply the draft to a higher chimney.*

In about one-third of the average private dwellings, the flues are so carelessly finished, or so much out of proportion to the work they are expected to do, that it is almost impossible to get gilt-edged results from heating apparatus connected with them without a thorough investigation along the lines we have attempted to point out.

*From *The Boiler Magazine*, Kellogg-Mackay-Cameron Company, Chicago.

ASSOCIATION NOTES.

SOCIETY OF BEAUX-ARTS ARCHITECTS.

A meeting of the Society of Beaux-Arts Architects was held in New York, February 15, S. B. P. Trowbridge presiding. Provision was made for establishing a traveling scholarship to be won by competition and to carry with it a two years' course in architecture at the École de Beaux-Arts in Paris. Addresses were made by John M. Carrere, John Howard, Professor Baird, of the University of Pennsylvania, and Lloyd Warren.

BROOKLYN CHAPTER, A. I. A.

A comprehensive report upon the existing conditions of theater safety was formulated by the Brooklyn Chapter of the American Institute of Architects at a large meeting February 11. As the deductions are the most comprehensive that have yet been made upon the subject and cover the main points, they are given in full:

The undersigned committee, appointed by the Brooklyn Chapter of the American Institute of Architects to consider the causes of and remedies for theater fire disasters, of which the great loss of life incident to the recent Iroquois Theater fire in Chicago is an example, and the bearing of same upon the public safety of the theaters of the City of New York and the laws relating thereto, report as follows:

1. The laws relating to theaters and penalties for non-compliance therewith should be consistently enforced.

2. That, in our opinion, the law relating to theaters and places of public amusement, Section 109 of the Building Code, is full and explicit in respect to provisions for exits, seating, staircases, courts, stage arrangement and appliances for putting out fires.

3. That the danger to be apprehended lies largely, first, in neglect of proper inspection on the part of the authorities to ascertain if all the equipment is in condition for instant operation, and second, probability of either unreliable or entire lack of fireproof treatment of scenery, both stock scenery and that of traveling companies.

4. That, while your committee believes that the present equipment required for putting out fires would be efficient if in proper condition, yet to guard against possible failure, as a matter of precaution, the water equipment should be increased, introducing additional sprinklers, together with a "dry pipe" system supplied with a separate and distinct tank, which, by turning on a valve at the stage level or from the fly galleries, by the firemen on duty, or stage hands, could be brought immediately into use. Also in addition to the arrangement of sprinklers around the proscenium arch on the stage side there should be some means devised whereby a sheet of water would fall on the auditorium side of the curtain, presumably connected with the "dry pipe" system before mentioned, thus causing two sheets of water, one inside and one outside of the curtain, to act simultaneously. This system should be applied also to the first, second, third and fourth entrances in the rigging loft.

5. That the law should be rigidly enforced in respect to fireproofing scenery, not only stock scenery but also that brought in by traveling companies, and that tests should be made from time to time to show that all scenery will resist fire.

6. That the present method of constructing and hanging asbestos curtains is imperfect. In view of this fact, asbestos curtains should be reinforced by steel bands and should be raised and lowered by some means other than by an ordinary windlass, possibly by hydraulic pressure or elec-

* Chimney Design and Theory.— *Christie.*

tric motor, the contention being that, by the ordinary means, the curtain is apt to fall too rapidly and possibly break away from the hanging lines.

7. That the arrangement for opening a part of the roof, as required by the law, could be improved by substituting other means of enforcing draft in that direction, the general impression being that the present skylights would be inoperative during heavy snow-storms in the winter-time. Large ventilators, operated by motors, which could be put into operation either by thermostatic device or from the stage by the firemen on duty would be preferable.

8. That the closing of emergency exits during a performance should be by such means as could be easily opened from the auditorium side without keys, objection being raised by managers to the manner by which the doors can be opened from the court side.

9. The emergency exits should be put in perfect repair for constant use and all exits should be thrown open and used by the public in leaving the theater after every performance.

10. That the sprinkler system should be tested weekly, arrangements for such tests to be attached to the feed pipes near the stage level whereby water could be drawn from the pipes, showing that the system is ready for operation. Tell-tale gauges should be placed in some conspicuous place showing water condition of tank supplying the sprinkler system.

11. That all woodwork in the auditorium and stage should be eliminated so far as it is possible, and such woodwork that may be used should be treated by fireproofing process, including all floor boards.

12. That the equipment of a theater should be done under the direction of the Superintendent of Buildings. After the occupation of the theater, the Fire Department should have supervision of all apparatus and be held responsible for its condition.

13. That a commission of competent experts, consisting of architects, engineers, electricians and fire insurance experts, should be appointed by the city authorities to investigate thoroughly and formulate whatever additions and modifications of Section 109 of the Building Code may be considered advisable.

(Signed) Peter Collins,
Superintendent of Buildings, Borough of Brooklyn.
Francis H. Kimball,
Washington Hull,
President, Brooklyn Chapter, American Institute of Architects.
Committee on Theaters.

The Chapter also discussed plans for its fourth annual exhibition, which will be held at the Pouch Galley, from May 2 to May 21.

MOSAICS.

James S. Arnot, architect, has opened up offices in rooms 419-420 Fernwell building, Spokane, Washington, and requests that material men send to his office their latest catalogues.

P. & F. Corbin, New Britain, Connecticut, state that the first edition of "The Skyline of New York," which they published a few months ago, was so quickly exhausted that they have printed a second edition and would be pleased to send a copy, with their compliments, to any of our readers, upon request.

The remarkable manner in which some buildings escaped or withstood the fierce onslaught of the fire at Baltimore is exemplified by the Merchants National Bank, erected of granite from the Maine & New Hampshire Granite Co. by Messrs. Edwards & Ward, of Chicago, and located quite in the heart of the burned district.

Robert Maynicke, architect, of New York, has obtained a verdict of $40,000 against the Central Realty, Bond & Trust Company for plans he prepared in 1899 for the construction of the Broad Exchange building. The plans were drawn on a "rush" order in advance of a change in the New York building laws requiring fireproofing throughout the $3,000,000 building at a saving of $450,000. The suit was for about $80,000, or two and one-half per cent of the total cost. The enterprise was twice transferred after the building was commenced, but this, it seems, did not affect the liability of the original owners.

They tell a story in New York that is ludicrous or serious, according to one's point of view. A millionaire wishing for a palatial residence refused the plans of three architects, bought plans in Paris, and, returning, took them to a Fifth avenue decorator and told him to superintend the building of the house. In other words, all the changes that may be made, all the amendments to the specifications that may become necessary as the work progresses, and all the thousand and one details which always arise during the construction of a house of this character will be left very largely to the judgment of a man familiar with the value of antiques and tapestries. When, as an investor, he erects a skyscraper he will probably leave the planning to the janitor or the real estate man who is expert on the value of floor space.

The suit in equity between Austin W. Lord and J. Monroe Hewlett as plaintiffs, and Washington Hull, of New York, demanding an accounting without dissolution of partnership, in which the lower courts ruled for the plaintiffs, the Court of Appeals reversed the judgments of these courts and placed the parties back where they were before the action commenced and dismissed the complaint, with costs to the defendant Hull against the plaintiffs. The court cited a large number of precedents in English courts and established a new precedent for the laws of the State of New York in that "A court of equity will not take cognizance of an action for an accounting as a mere incident to the settlement of a solitary matter in dispute between partners, when it is not vital to either party or to the business, and dissolution is not sought."

The statement that the costly new church edifice which Dr. Parkhurst's people are to erect in New York is not to have a spire has excited an amount of comment more significant in its volume than in its specific nature. The change amounts simply to an adoption of the Byzantine as distinguished from the Gothic style of architecture — there is to be a great flat dome — and the substitution was made necessary by the fact that very tall buildings, tall enough to dwarf any spire, may be expected to crowd around the church. The extent and regretful nature of the comment on the abandonment of the spire, says the Philadelphia *Public Ledger*, shows how firmly the Gothic has at last been adopted into our ideal of ecclesiastical architecture. The Byzantine has just as good a claim to be considered, and the classic revival is not so old that many a Romanesque and even Grecian building is not still to be found in use for church purposes. But behold! One more conspicuous church is to be built, and there is a howl because it can not have a spire — and this although the ringing of bells has become such an anachronism in a downtown church that the place to suspend them might well be dispensed with.

OUR ILLUSTRATIONS.

Interior View, Residence.

Residence of W. A. Otis, architect, Winnetka, Illinois.

Reception Room, Silver Grille Hotel, Spokane, Washington. Cutter & Malmgren, architects.

Davenport's Restaurant (remodeled), Spokane, Washington. Cutter & Malmgren, architects.

First Presbyterian Church, Rockford, Illinois. Patton & Miller, architects. Cost, $37,000.

First Floor Plan, School of Education, University of Chicago. James Gamble Rogers, architect.

First Congregational Church, Wilmette, Illinois. Patton & Miller, architects, Chicago. Cost, $30,000.

"New Kentucky Home," World's Fair, St. Louis. Kenneth McDonald and J. F. Sheblessy, architects.

Selected Composition Design, University of Ottawa, Canada. A. O. Von Herbulis, architect, Washington, D. C.

Photogravure Plate: South Front, School of Education, University of Chicago. James Gamble Rogers, architect.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure Edition.

Residence, Haverford, Pennsylvania.

Drexel Institute, Philadelphia. Wilson Bros. & Co., architects.

Blackstone Library, Chicago. S. S. Beman, architect. Three full-page plates are shown.

School of Education, University of Chicago. James Gamble Rogers, architect. Two full-page plates are shown. To understand properly the arrangement of the buildings forming the School of Education, it is necessary to mention the plan which is intended to be followed in completing this group. The buildings now fronting on the Midway, together with those running north from the east and west corners, inclose one-half the large court or quadrangle which will be formed when the rest of this group shall have been built. This courtyard will be embellished by trees and shrubs, and will form the playground for the students, and around it will run the arcade, which, together with the corridors of the upper floors, forms easy communication between the various classrooms and laboratories. The buildings which are to complete this quadrangle will be the same in architectural treatment as those already built. North of these will be the Assembly Hall and Gymnasium, opening directly upon the arcade. The east and west arcades will continue north to the Manual Training School, now nearly completed. Gothic architecture was used in designing these buildings, and the use of brick for the exterior was given upon account of the desire of the University authorities to conform to the style of architecture already adopted in the University architecture. The style has been treated in a very liberal manner to express in a degree modern thought and the requirements of modern schools. This mode of construction is interesting from the point of view of hygiene, abundance of light, safety from fire panic, and the concrete construction of the floors. The broad, straight corridors affording abundant light and air, lead to well-distributed stairs and are panic-proof; and the construction itself is fireproof. The ornamental iron and bronze, both in its utility value and art decoration, has been carried out with extreme care so as to harmonize with the general strength and character of this building, and consists of iron stairways throughout, iron railings, gates and column bases; bronze bulletin boards, lamps and lamp fixtures. The work was accomplished from special designs of the architect by F. P. Smith Wire & Iron Works, Chicago. The construction of the floors is a logical use of steel and concrete, in that it puts each to its appropriate use — the concrete in compression and the steel placed at the bottom of the beam in tension. These floors are 25 feet clear span, and were tested to 608 pounds per square foot, live load. The outside walls are faced with buff Bedford from the Old Hoosier Quarry of the Bedford Quarries Company. The roofs are red shingle tile. The walls of the corridors to a height of 7½ feet are faced with gray pressed brick. Above this line the walls are plastered. The interior partitions are built of hollow tile. The main entrance hall is finished in buff Bedford stone and contains large fireplace and stone benches. The architect was relieved from much care and anxiety from the fact that the construction was in the skilful and responsible hands of the general contractors, Wells Brothers Company, Chicago, who, as will be remembered, were also contractors for the extensive Tower Group, illustrated in the March number. As is usual with the work intrusted to this company, all the details were so carefully and intelligently handled that each part was carried out in due order and without the too-often annoying friction.

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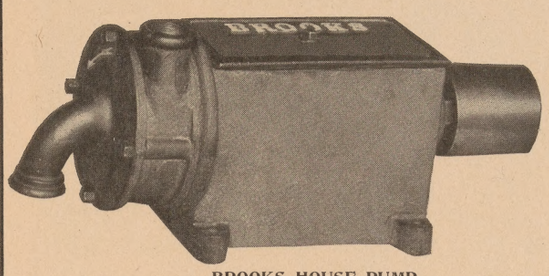

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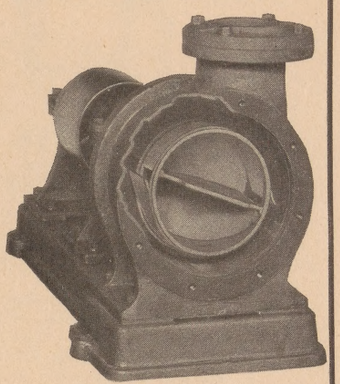
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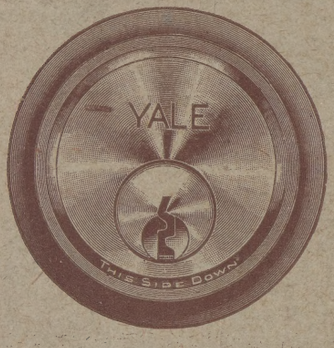

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